



RAILROAD COMMISSION OF TEXAS

OFFICE OF GENERAL COUNSEL

RULE 37 CASE NO. 0265651
District 09

APPLICATION OF XTO ENERGY, INC., FOR A RULE 37 EXCEPTION FOR THE TWU B UNIT LEASE, WELL NO. 1H, NEWARK, EAST (BARNETT SHALE) FIELD, TARRANT COUNTY, TEXAS

APPEARANCES:

FOR APPLICANT:

David Gross
Tarah Angelidis
Derrick Dollar
Ty Eagle

APPLICANT:

XTO Energy, Inc.

FOR PROTESTANTS:

Louis McBee

Terry Gibbons

PROTESTANTS:

"McBee Protestants"¹

Terry Gibbons

PROPOSAL FOR DECISION

PROCEDURAL HISTORY

DATE APPLICATION FILED:
DATE OF NOTICE OF HEARING:
DATE OF HEARING:
HEARD BY:

April 25, 2010
June 22, 2010
September 9, 2010
James M. Doherty, Hearings Examiner
Andres J. Trevino, Technical Examiner
September 22, 2010
November 19, 2010

DATE TRANSCRIPT RECEIVED:
DATE PFD CIRCULATED:

¹ Lewis McBee appeared for himself and for protestants Alfonso Martinez, Enrique Alvarez, Sandy Valenzuela, Rebecca Romero II, Santiago Romero, Juanita Torres, Rebecca Romero Vasquez, Alma Davila, Ramona L. Moore, George Rodriguez, Phuoc Kiet Mai, Mary Hope Hilsman, and Harriett Philpott.

STATEMENT OF THE CASE

XTO Energy, Inc. ("XTO") seeks an amended drilling permit pursuant to the provisions of Statewide Rule 37 for the TWU B Unit, Well No. 1H, a proposed horizontal well in the Newark, East (Barnett Shale) Field, Tarrant County, Texas. This well has not yet been drilled.

Appendix 1 to this proposal for decision is a copy of XTO Exhibit No. 3 which is a plat showing the 71.022 acre TWU B Unit, proposed Well No. 1H, the leased and participating tracts within the Unit, and the unleased tracts within the Unit. The surface location of the proposed well is off the TWU B Unit to the southwest on property owned by Texas Wesleyan University 239 feet from the west line and 1,187 feet from the south line of the Ringer, J. Survey, A-1287, in Tarrant County. The penetration point for the proposed well is 497 feet from the west line and 335 feet from the south line of the TWU B Unit. The terminus of the proposed well is 335 feet from the east line and 367 feet from the north line of the TWU B Unit and 1,854 feet from the north line and 707 feet from the east line of the Anderson, P. Survey, A-32, Tarrant County.

Special field rules for the Newark, East (Barnett Shale) Field provide for 330 foot lease line spacing. A Rule 37 exception is needed for the proposed TWU B Unit, Well No. 1H because the section of the well proposed to be perforated is closer than 330 feet to the external unit boundary and the boundary of certain tracts internal to the Unit that are unleased. The application is opposed by certain owners of unleased tracts internal to the Unit. A hearing was held on September 9, 2010, at which XTO and protestants appeared and presented evidence. The examiners recommend that the application be approved.

DISCUSSION OF THE EVIDENCE

XTO Energy, Inc.

XTO Exhibit No. 3 (Appendix 1 to this proposal for decision) is a plat showing the TWU B Unit, the pathway of the proposed Well No. 1H, the tracts within the Unit that are leased or participating tracts, and the tracts within the Unit that are unleased. The proposed wellbore path is along Lancaster Avenue, and the minerals beneath Lancaster Avenue were leased by XTO from the Texas General Land Office. The unleased tracts are dispersed throughout the Unit. XTO offered to lease from owners of all of the unleased tracts, and is still willing to lease these tracts, even subsequent to the drilling of the proposed well, if the unleased owners will agree.²

² XTO is currently offering a lease bonus of \$4,000 per net mineral acre, which XTO deems fair and reasonable. In March 2008, XTO entered into an agreement with five neighborhood associations ("Greater Meadowbrook Community") pursuant to which XTO agreed to extend certain lease terms to individual tract owners in the Community area, and the neighborhood associations agreed to endorse these lease terms to their members. At that time, the lease terms contemplated a bonus of \$25,000 per net mineral acre and a 26.5% royalty. XTO leased about 2,700 acres of land pursuant to this agreement. However, on October 15, 2008, XTO rescinded its offer to lease on these terms.

At an earlier date, XTO filed an application pursuant to the Mineral Interest Pooling Act seeking to force pool all mineral interests in tracts within the TWU B Unit. XTO Exhibit No. 9, a copy of which is attached to this proposal for decision as Appendix 2, is a plat showing the MIPA unit that was proposed in XTO's MIPA application for the TWU B Unit. This plat shows XTO's leased acreage adjoining the presently proposed TWU B Unit as well as adjoining unleased tracts. Ultimately, XTO decided that it made more sense to apply for a Rule 37 exception to drill the proposed TWU B Unit, Well No. 1H along Lancaster Avenue, and the MIPA application was withdrawn. Prior to this withdrawal, certain unleased owners accepted XTO's voluntary pooling offer to participate as working interest owners in the proposed well and pay their pro rata share of drilling and completion costs. The tracts of these owners are shown on the plat in Appendix 1 to this proposal for decision as "participating" tracts.³

According to XTO, the off-Unit surface location for the proposed TWU B Unit, Well No. 1H shown on Appendix 1 to this proposal for decision is the only surface location available to XTO from which a well on the Unit can be drilled. The surface of the Unit itself is occupied by mixed uses, and is heavily residential. XTO is also precluded from positioning a surface location for Well No. 1H on the Unit itself by surface use restrictions in its oil and gas leases.⁴

Within the Unit boundary shown on Appendix 1 to this proposal for decision, XTO has leased 71.022 acres. The total amount of acreage within the Unit boundary, including the unleased and participating tracts, is 88.3663 acres.⁵ The unleased tracts contain a total of 17.3443 acres. The acreage in the tracts owned by the protestants who appeared at the hearing was not calculated, but the total amount of acreage included in tracts owned by persons who filed protests attached on the Commission's Online System is 3.6418 acres.

A geologist employed by XTO presented a structure/isopach map of the Barnett Shale and a three well structural cross section in the area of the TWU B Unit. The Barnett Shale is about 350 feet thick in this area. According to XTO's geologist, the Barnett Shale is present and productive throughout the area of the TWU B Unit.

A reservoir engineer employed by XTO performed a study of all Barnett Shale wells within five miles of the pad site for the proposed TWU B Unit, Well No. 1H. There are 162 Barnett Shale

³ The "participating" owners have not yet been called upon to advance their pro rata share of drilling and completion costs. Should any of them decline to pay their share of these costs in advance of drilling, they will revert to unleased/non-participating status.

⁴ There is some evidence that XTO could position a surface location on the Unit with the consent of its mineral lessors, but that this would require consent of 55% of all of XTO's lessors in a 2,700 acre area.

⁵ In a few instances unleased tracts are shown on the Unit plat in Appendix 1 to this proposal for decision contiguous to and within the Unit boundary. The examiners believe that the plat of the Unit should show a Unit boundary excluding these unleased tracts from the Unit.

wells within this five mile radius. Estimated ultimate recoveries were calculated for these wells by decline curve and data was also compiled regarding the perforated lateral length of each well. From this information, a plot of estimated ultimate recovery versus drainhole length was generated and a computer generated least squares regression of the data points on the plot developed a line through the data points with a positive slope of 1.0221 and an intercept of 490.73. The implication of this study is that a vertical well would have an estimated ultimate recovery of 490.73 MMCF of gas⁶ and that as the drainhole length of a horizontal well increases, the well's estimated ultimate recovery also increases. According to this study, every foot of horizontal drainhole ultimately will recover 1.0221 MMCF of gas.

Due to the size and configuration of the TWU B Unit and the location of tracts internal to the unit that have unleased interests, there is no regular location on the Unit where a feasible horizontal well might be drilled. A vertical well could not be drilled at a surface location on the TWU B Unit due to intensive surface development and restrictions in XTO's oil and gas leases. There is a small patch of acreage in the southwestern portion of the unit that is at least 330 feet from all surrounding mineral property lines, and, at least theoretically, it would be possible to drill a directional "S Curve" well from the off-Unit pad site with a bottom hole at this regular location. According to XTO's reservoir engineer, however, this directional well would not be economically feasible. An AFE generated by XTO showed that such a directional well would cost about \$1,795,000 to drill and complete. Based on operating costs for nearby vertical wells, the directional well would have operating costs of about \$1,875 per month. Assuming a recovery of about 0.5 BCF of gas⁷, and assuming an average gas price of \$5.50 per MCF, the directional well would not pay out the cost to drill, complete, and operate the well. Alternatively, assuming a recovery of 1.5 BCF (based on the average EUR for four directional wells shown on XTO's plot of EUR versus perforated lateral length), and an average gas price of \$5.50 per MCF, the directional well would take 7.2 years to pay out and provide a rate of return less than 10%, which would not meet XTO's economic standards. According to XTO's reservoir engineer, even if economic factors are disregarded, a directional well would not achieve ultimate recovery sufficient to enable XTO to recover its fair share of gas from the reservoir.

XTO's reservoir engineer also presented an estimate of current recoverable gas in the Newark, East (Barnett Shale) Field beneath the TWU B Unit based on a traditional volumetric calculation performed by Devon Energy & Production Company, L.P. in a 2005 Barnett Shale field rules hearing before the Commission in Oil & Gas Docket No. 09-0243843. Devon's study developed a gas in place calculation of 139 BCF per square mile (640 acres) for Tarrant County

⁶ However, the average estimated ultimate recovery of four vertical wells included in the study as developed by decline curve analysis is about 1.5 BCF.

⁷ Based on the 490.73 MMCF intercept shown on XTO's plot of EUR versus perforated lateral length for the 162 Barnett Shale wells within five miles of the pad site for the proposed TWU B Unit, Well No. 1H.

based on reservoir thickness of 433 feet. Reservoir thickness in the area of the TWU B Unit is about 350 feet, which under Devon's methodology would calculate to 112 BCF per square mile. For the 71.022 acre TWU B Unit, gas in place is about 12.5 BCF and based on a 30% recovery factor, XTO's reservoir engineer estimated recoverable gas in place of 3.75 BCF.

The proposed TWU B Unit, Well No. 1H will have perforated lateral length of 3,834 feet. Assuming, as predicted by XTO's plot of EUR versus perforated lateral length, this well will recover 490.73 MMCF plus 1.0221 MMCF for every foot of perforated lateral, the well will recover about 4.4 BCF of the 12.5 BCF of gas in place beneath the TWU B Unit. XTO asserts that approval of a Rule 37 exception for the proposed TWU B Unit, Well No. 1H is necessary to prevent confiscation, that is, to provide XTO with an opportunity to recover its fair share of gas, measured by the current recoverable reserves beneath the Unit.

Louis McBee

Mr. McBee appeared to represent himself and 13 other protestants described by McBee to be owners of unleased tracts within 330 feet of the proposed TWU B Unit, Well No. 1H drainhole. None of the protestants represented by Mr. McBee made a personal appearance at the hearing or offered evidence, but Mr. McBee presented a narrative statement on their behalf.

Mr. McBee believes that XTO's case is mostly about economics and that an operator is not guaranteed a well that meets its self-imposed criteria for economic viability. According to Mr. McBee, XTO has the ability to drill a "vertical" well at a regular location on the TWU B Unit. Mr. McBee asserts that XTO failed to justify the requested Rule 37 exception based on confiscation or waste. He makes the point that XTO created its own voluntary pooled unit, only to complain now that the unit cannot be developed without a Rule 37 exception.

Mr. McBee also asserted that XTO has not made a reasonable effort to lease the protestants' tracts. He believes that XTO should offer the bonus and lease terms set forth in the March 2008 Greater Meadowbrook Community lease agreement, which XTO rescinded in October 2008.

Terry Gibbons

Mr. Gibbons is the owner of an unleased tract that is 171 feet from the proposed TWU B Unit, Well No. 1H drainhole. He asserts that XTO's economic modeling for a directional well that might be drilled from the off-Unit pad site to a bottom hole at a regular location should be rejected because there is no demonstrated basis for assuming an average gas price over the life of the well of \$5.50, which Mr. Gibbons believes should be higher.

Mr. Gibbons owns 21 properties in Fort Worth that he has not agreed to lease. He would be willing to lease these properties, including the one tract involved here, for a bonus and lease consideration that he deems fair and reasonable. Mr. Gibbons believes that what is a fair and

reasonable lease bonus was fixed in 2008 when XTO was offering \$25,000 per net mineral acre. He does not consider XTO's current offer of \$4,000 per net mineral acre fair and reasonable, and suggests that XTO is using the decline in gas prices since 2008 as a "scapegoat" for offering a lesser amount of bonus money for leases. Mr. Gibbons further suggests that as an alternative to seeking a Rule 37 exception, XTO should extend its 2008 bonus and lease offer to all protestants and lease their tracts.

EXAMINERS' OPINION

An owner of oil and gas is entitled to an opportunity to recover the reserves underlying his tract, and any denial of that opportunity amounts to confiscation. *Atlantic Refining Co. v. Railroad Commission*, 346 S.W.2d 801 (Tex. 1961); *Imperial American Resources Fund, Inc. v. Railroad Commission*, 557 S.W.2d 280 (Tex. 1977). When the subject tract is capable of supporting a regular location, the applicant for a Rule 37 exception based on confiscation must prove that the proposed irregular location is necessary because of surface or subsurface conditions and that the proposed location is reasonable. To do this, the applicant must show that it is not feasible to recover its fair share of hydrocarbons from regular locations.

The examiners are of the opinion that XTO proved that the requested Rule 37 exception is necessary to prevent confiscation. Proposed Well No. 1H is a first well on the 71.022-acre TWU B Unit. Gas in place beneath the TWU B Unit is about 12.5 BCF. The fair share of gas of XTO and its lessors is measured by the current recoverable gas beneath the Unit. Assuming a recovery factor of 30%, the current recoverable gas beneath the Unit is about 3.75 BCF. Any denial to XTO and its lessors of an opportunity to produce this amount of gas would amount to confiscation.

There is a highly limited patch of acreage in the southwest portion of the TWU B Unit that is 330 feet or more from any surrounding mineral property line. This "regular" location will not come close to accommodating a feasible horizontal well. A vertical well cannot be drilled from a surface location on this acreage because of surface development and surface use restrictions in XTO's oil and gas leases. Theoretically, it would be possible to drill a "S Curve" directional well from the off-Unit pad site with a bottom hole on the "regular location" acreage, but the evidence shows that such a well would not provide XTO and its lessors with an opportunity to recover their fair share of gas. XTO's plot of EUR versus perforated lateral length for 162 Barnett Shale wells within five miles of the pad site for the TWU B Unit, Well No. 1H predicts that a directional well would recover only about 0.49 BCF, roughly 3.26 BCF less than the fair share of XTO and its lessors. There are four vertical wells included in XTO's plot of EUR versus perforated lateral length for which the average EUR based on decline curve analysis is 1.5 BCF, but even if this is the recovery which should be predicted for a directional well bottomed at a regular location on the TWU B Unit, the directional well would recover roughly 2.25 BCF less than the fair share of XTO and its lessors. The examiners are of the opinion that XTO's evidence condemned the limited regular location acreage on the TWU B Unit by demonstrating that the only well that could be drilled there would not provide XTO and its lessors with an opportunity to recover their fair share of gas.

Assuming that the proposed TWU B Unit, Well No. 1H will recover 490.73 MMCF plus 1.0221 MMCF for every foot of perforated lateral, as predicted by XTO's plot of EUR versus perforated lateral length for 162 Barnett Shale wells in the area, the well will recover about 4.4 BCF of the 12.5 BCF of gas in place beneath the TWU B Unit. This is slightly more gas than the calculated current recoverable gas beneath the Unit, but neither the calculation of current recoverable gas or the calculation of ultimate recovery for the proposed well is exact science. What is evident is that in the factual context of this case, a horizontal well such as the proposed TWU B Unit, Well No. 1H is necessary to provide XTO and its lessors with an opportunity to recover their fair share of gas and no alternative regular location will provide the same opportunity.

The examiners have considered the correlative rights of the protestants in their unleased tracts, but these rights must be weighed against the correlative rights of XTO and the several hundred of its lessors that have been pooled into the TWU B Unit. XTO made an attempt to lease all of the protestants' tracts, and the evidence suggests that the only reason protestants' interests are not leased and pooled is protestants' dissatisfaction with the amount of lease bonus offered by XTO. The Commission is without authority to dictate to the parties the terms on which mineral interests must be leased, but XTO has stated its continued willingness to lease protestants' tracts in order that protestants may participate in production of the proposed well. There is no evidence as to the amount of current recoverable gas beneath the unleased tracts of the protestants who appeared at the hearing, but according to XTO, the current recoverable gas beneath the tracts of all persons who are listed as protestants on the Commission's Online System is about 0.2 BCF. Requiring XTO to drill a directional well from the off-Unit pad site to a bottom hole at the only regular location on the unit would deprive XTO and its lessors of an opportunity to recover anywhere from 2.25 BCF to 3.26 BCF of gas that is likely to be recovered by the proposed horizontal well.

The examiners have concluded that the location of the proposed TWU B Unit, Well No. 1H is reasonable. This location is roughly in the center of the TWU B Unit and there appears to be no less irregular location in relationship to the unleased tracts that are internal to the Unit. Furthermore, the well is proposed to be drilled along Lancaster Avenue which is the only available pathway on the unit for a comparable horizontal well that is unobstructed by any unleased tract.

Accordingly, the examiners recommend that the XTO application be approved. Based on the evidence in the record in this docket, the examiners recommend adoption of the following Findings of Fact and Conclusions of Law.

FINDINGS OF FACT

1. At least ten (10) days notice of this hearing was provided to all affected persons as defined by Statewide Rule 37(a)(2) and 37(a)(3) and the special field rules for the Newark, East (Barnett Shale) Field.
2. XTO Energy, Inc. ("XTO") seeks an amended drilling permit pursuant to the provisions of Statewide Rule 37 for the TWU B Unit, Well No. 1H, a proposed horizontal well in the Newark, East (Barnett Shale) Field, Tarrant County, Texas.

3. Special field rules for the Newark, East (Barnett Shale) Field provide for 330' lease line spacing. As to horizontal wells, where the horizontal portion of the well is cased and cemented back above the top of the Barnett Shale formation, the distance to any property line, lease line, or subdivision line is calculated based on the distance to the nearest perforation in the well, and not based on the penetration point or terminus. Where an external casing packer is placed in a horizontal well and cement is pumped above the external casing packer to a depth above the top of the Barnett Shale formation, the distance to any property line, lease line, or subdivision line is calculated based on the top of the external casing packer or the closest open hole section in the Barnett Shale. The standard drilling and proration unit for the Newark, East (Barnett Shale) Field is 320 acres. An operator is permitted to form optional drilling units of 20 acres.
4. The surface location of the proposed well is off the TWU B Unit to the southwest on property owned by Texas Wesleyan University 239 feet from the west line and 1,187 feet from the south line of the Ringer, J. Survey, A-1287, in Tarrant County. The penetration point for the proposed well is 497 feet from the west line and 335 feet from the south line of the TWU B Unit. The terminus of the proposed well is 335 feet from the east line and 367 feet from the north line of the TWU B Unit and 1,854 feet from the north line and 707 feet from the east line of the Anderson, P. Survey, A-32, Tarrant County. Appendix 1 to this proposal for decision, incorporated into this finding by reference, is a plat showing the 71.022 acre TWU B Unit, proposed Well No. 1H, the leased and participating tracts within the Unit, and the unleased tracts within the Unit.
5. The off-Unit surface location shown on Appendix 1 to this proposal for decision is the only surface location available to XTO for the drilling of a well on the TWU B Unit. A surface location on the Unit itself is precluded by surface development and by restrictions in XTO's oil and gas leases.
6. A Rule 37 exception is needed for the proposed TWU B Unit, Well No. 1H because the section of the well proposed to be perforated is closer than 330 feet to the external unit boundary and the boundary of certain tracts internal to the Unit that are unleased.
7. The XTO application is opposed by owners of certain unleased tracts internal to the TWU B Unit represented by protestants to be closer than 330 feet to the drainhole of the proposed well. XTO made an attempt to lease protestants' tracts but was unsuccessful. XTO remains willing to lease these tracts if protestants will agree.
8. The Barnett Shale is about 350 feet thick in this area and is present and productive throughout the area of the TWU B Unit.
9. Barnett Shale gas wells within five miles of the pad site of the proposed TWU B Unit, Well No. 1H recover an average of 490.73 MMCF of gas plus 1.0221 MMCF per foot of horizontal drainhole.

- a. XTO studied production data, effective drainhole length, and decline curves to develop estimated ultimate recoveries for 162 Barnett Shale gas wells within five miles of the pad site for proposed Well No. 1H.
 - b. XTO generated a plot of estimated ultimate recovery versus drainhole length for the 162 study wells. A computer generated least squares regression of the data points on the plot developed a line through the data points with a positive slope of 1.0221 and an intercept of 490.73.
 - c. The implication of XTO's study is that a vertical well in the area will have an estimated ultimate recovery of 0.49 BCF of gas, and a horizontal well ultimately will recover 490.73 MMCF plus 1.0221 MMCF for every foot of drainhole.
 - d. Based on decline curve analysis, four vertical wells in the XTO study will have an average estimated ultimate recovery of 1.5 BCF each.
10. Due to the size and configuration of the TWU B Unit and the location of tracts internal to the unit that have unleased interests, there is no regular location on the Unit, 330 feet or more away from surrounding mineral property lines, where a feasible horizontal well might be drilled. A vertical well could not be drilled at a surface location on the TWU B Unit due to intensive surface development and restrictions in XTO's oil and gas leases.
11. There is a small patch of acreage in the southwestern portion of the unit that is at least 330 feet from all surrounding mineral property lines, and, at least theoretically, it would be possible to drill a directional "S Curve" well from the off-Unit pad site with a bottom hole at this regular location. Such a directional well would not, however, provide XTO and its lessors with an opportunity to recover their fair share of gas from the reservoir.
 - a. Gas in place in the subject reservoir beneath the TWU B Unit is about 12.5 BCF. Assuming a 30% recovery factor, current recoverable gas beneath the Unit is about 3.75 BCF.
 - b. A directional well in this area of the Barnett Shale ultimately would recover anywhere from 0.49 BCF to 1.5 BCF of gas, which would be 2.25 BCF to 3.26 BCF less than the current recoverable gas beneath the TWU B Unit.
12. The proposed TWU B Unit, Well No. 1H will have perforated lateral length of 3,834 feet. Assuming, as predicted by XTO's plot of EUR versus perforated lateral length, this well will recover 490.73 MMCF plus 1.0221 MMCF for every foot of perforated lateral, the well will recover about 4.4 BCF.
13. Drilling of the TWU B Unit, Well No. 1H at the location proposed by XTO is necessary to provide XTO and its lessors with an opportunity to recover their fair share of gas from the reservoir.

14. The proposed location of the TWU B Unit, Well No. 1H is reasonable.
- a. This location is roughly in the center of the TWU B Unit.
 - b. There is no less irregular location in relationship to the unleased tracts that are internal to the TWU B Unit.
 - c. The well is proposed to be drilled along Lancaster Avenue which is the only available pathway on the TWU B Unit for a comparable horizontal well that is unobstructed by any unleased tract.

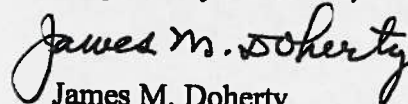
CONCLUSIONS OF LAW

1. Proper notice of hearing was timely issued by the Railroad Commission to appropriate persons legally entitled to notice.
2. All things necessary to the Commission attaining jurisdiction over the subject matter and the parties in this hearing have been performed.
3. Approval of a Rule 37 exception for the TWU B Unit, Well No. 1H as proposed by XTO Energy, Inc., is necessary to prevent confiscation and protect the correlative rights of mineral owners.

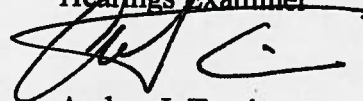
RECOMMENDATION

The examiners recommend that the application of XTO Energy, Inc., for a Rule 37 exception for the TWU B Unit, Well No. 1H in the Newark, East (Barnett Shale) Field, Tarrant County, Texas, be granted as necessary to prevent confiscation and protect correlative rights.

Respectfully submitted,



James M. Doherty
Hearings Examiner



Andres J. Trevino
Technical Examiner